

09/591,017

D558

REMARKS

Claims 1-8, 10-19, 21-26, 28, 29, 31-34, and 36-38 are currently pending in the subject application, and are presently under consideration. A clean version of all pending claims is found at pages 2-6. A marked up version showing amendments made herein is found at pages 11-12. Claims 10 and 22 have been amended herein. Favorable reconsideration of the application is requested in view of the amendments and comments herein

I. Rejection of Claims 10-19, 21-26, and 28 Under 35 U.S.C. §112

Claims 10 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Office action states that "the at least one detector" in claims 10 and 22 lack insufficient antecedent basis. Accordingly, claims 10 and 22 have been amended to resolve the Examiner's rejection. Thus, withdrawal of the rejection of claims 10 and 22, and claims 11-19, 21, 23-26, and 28 which depend therefrom respectively, is respectfully requested.

II. Rejection of Claims 1-8 Under 35 U.S.C. 103(a)

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blesener *et al.* (5,121,988) in view of Harwell *et al.* (5,942,672). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Blesener *et al.* provides no motivation for modifying its particle counter system by incorporating use of an alarm system that becomes activated when the particle concentration rises above an unacceptable set point, as described in Harwell *et al.*

The prior art items themselves must suggest the desirability and thus the obviousness of making the combination without the slightest recourse to the teachings of the patent or application. Without such independent suggestion, the prior art is to be considered merely to be inviting unguided and speculative experimentation which is not the standard with which obviousness is determined. *Amgen, Inc. v. Chugai Pharmaceutical Co. Ltd.*, 927 F.2d 1200, 18 USPQ2d 1016 (Fed. Cir. 1991); *In re Laskowski*, 871 F.2d 115, 117, 10 USPQ2d 1397, 1398 (Fed. Cir. 1989); *In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1532 (Fed. Cir. 1988); *Hodosh v. Block Drug*, 786 F.2d at 1143 n.5., 229 USPQ at

09/591,017

D558

187 n.4; *In re Gordon*, 733 F.2d 900, 902 21 USPQ 1125, 1127 (Fed. Cir. 1985).

Blesener *et al.* merely discloses a particle counter device designed to attain representative particle concentrations in a continuous gas-flowing stream. Blesener *et al.* teaches placing its counter device within the gas-flowing stream so that a particle-laden gas stream passes through the counter's cavity. As the gas stream pass through the cavity, the particles intersect a light beam causing a reduction in the intensity of the incident light beam wherein changes in intensity of the light are correlated to the number of particles contained within a given volume of gas flowing through the cavity. Hence, the extent of the invention disclosed in Blesener *et al.* is limited to functioning as a particulate concentration sampling device. As a result of the particle counter being limited in scope to a sampling device, Blesener *et al.* does not teach or suggest the need to maintain particulate concentrations below a predetermined set point. Blesener *et al.* does not even suggest the existence of a set point level. Without a predefined set point level, one of ordinary skill in the art at the time of the claimed invention would not have had any motivation to employ an alarm system, as taught by Harwell *et al.*, that is activated when the particle concentration elevates above a predetermined unacceptable level.

Unlike Blesener *et al.*, the subject claimed invention does pertain to a photoresist coating process within a coating chamber in which a processor will activate an alarm if it has determined that the measured value exceeds a predefined set point value. Such process monitoring and control are critical to ensure successful coating of the photoresist onto a wafer. Consequently, the subject claimed invention mandates that its particle counter device function as a process monitor and control device rather than only a mere passive sampling device, as suffices in Blesener *et al.*

Consequently, one of ordinary skill in the art would not have been motivated by the particle gas sampling device disclosed in Blesener *et al.* to incorporate the alarm system disclosed in Harwell *et al.* Therefore, independent claim 1, and claims 2-8, which depend therefrom, are not obvious over Blesener *et al.* in view of Harwell *et al.* Accordingly, withdrawal of this rejection is respectfully requested.

09/591,017

D558

III. Rejection of Claims 29, 31-34, and 36-38 Under 35 U.S.C. 103(a)

Claims 29, 31-34, and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blesener *et al.* (5,121,988) in view of Liu (5,534,309). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Independent claims 29 and 34 of the subject claimed invention relates to exhausting contaminated particles from a process chamber *after* an alarm has indicated that a predetermined threshold value of particulate concentration has been exceeded. For the above-mentioned reasons, Blesener *et al.* does not teach or suggest employing an alarm system to warn of high particulate concentrations in a gas-flowing stream. Because Blesener *et al.* provides no motivation to incorporate an alarm system, there is logically no need to implement an exhaust system as employed in Liu. In the absence of a high-level contaminant alarm system which is activated when a predetermined set point has been exceeded, there is no way of determining when the need to exhaust contaminated particles arises.

Consequently, one of ordinary skill in the art would not have been motivated by the particle gas sampling device disclosed in Blesener *et al.* to incorporate the exhaust system disclosed in Liu. Therefore, independent claims 29 and 34, and claims 31-33 and 36-38 which depend therefrom respectively, are not obvious over Blesener *et al.* in view of Liu. Accordingly, withdrawal of this rejection is respectfully requested.

09/591,017

D558

III. Conclusion

The present application is believed to be condition for allowance in view of the above amendments and comments.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,

AMIN & TUROCY, LLP



Himanshu S. Amin

Reg. No. 40,894

24TH Floor, National City Center
1900 E. 9TH Street
Cleveland, Ohio 44114
Telephone (216) 696-8730
Facsimile (216) 696-8731

S:\HAM\AMD\p224us\ReplyShell.doc

FAX RECEIVED

NOV 21 2002

TECHNOLOGY CENTER 2800

09/591,017

D558

MARKED UP VERSION OF AMENDED CLAIMS

Please amend claims 10 and 22 in the manner indicated below:

10. (Twice Amended) A system for monitoring the contaminated particle count in a chamber, comprising:

at least one laser disposed in the chamber, the at least one laser adapted to send a ray of light across the chamber, and wherein the at least one laser includes a first laser located at a first height and a second laser located at a second height and the at least one [detector] laser includes a first detector located at the first height and adapted to receive light from the first laser and a second detector at the second height adapted to receive light from the second laser;

at least one detector disposed in the chamber, the at least one detector adapted to receive the ray of light and provide a signal corresponding to the intensity of the ray of light;

a measuring system operably coupled to the at least one detector, the measuring system adapted to receive the signal corresponding to the intensity of the ray of light and convert the signal to digital data; and

a processor operatively coupled to the measuring system, the processor adapted to receive the digital data from the measuring system and analyze the digital data wherein the difference of the intensity of the ray of light from the at least one laser to when it is received by at least one detector is proportional to the particle count in the chamber.

22. (Twice Amended) A system for controlling the contaminated particle count in an aerosol found in a chamber during a photoresist coating and/or development process of a semiconductor, the system comprising:

at least one laser disposed in the chamber, the at least one laser adapted to send a ray of light across the chamber, and wherein the at least one laser includes a first laser located at a first height and a second laser located a second height and the at least one [detector] laser includes a first detector located at the first height and adapted to receive light from the first laser and a second detector at the second height adapted to receive light from the second laser;

at least one detector disposed in the chamber, the at least one detector adapted to receive the ray of light and provide a signal corresponding to the intensity of the ray of light;

09/591,017

D558

a measuring system operably coupled to the at least one detector, the measuring system adapted to receive the signal corresponding to the intensity of the ray of light and convert the signal to digital data; and

a processor operatively coupled to the measuring system, the processor adapted to receive the digital data from the measuring system and analyze the digital data wherein the difference of the intensity of the ray of light from the at least one laser to when it is received by at least one detector is proportional to the particle count in the chamber;

an exhaust fan in communicative relationship with the chamber, the exhaust fan adapted to remove contaminated particles out of the chamber; and

a flow control valve controlling the exhausting level of the exhaust fan based on analyzed data received from the processor.

FAX RECEIVED

NOV 21 2002

TECHNOLOGY CENTER 2800